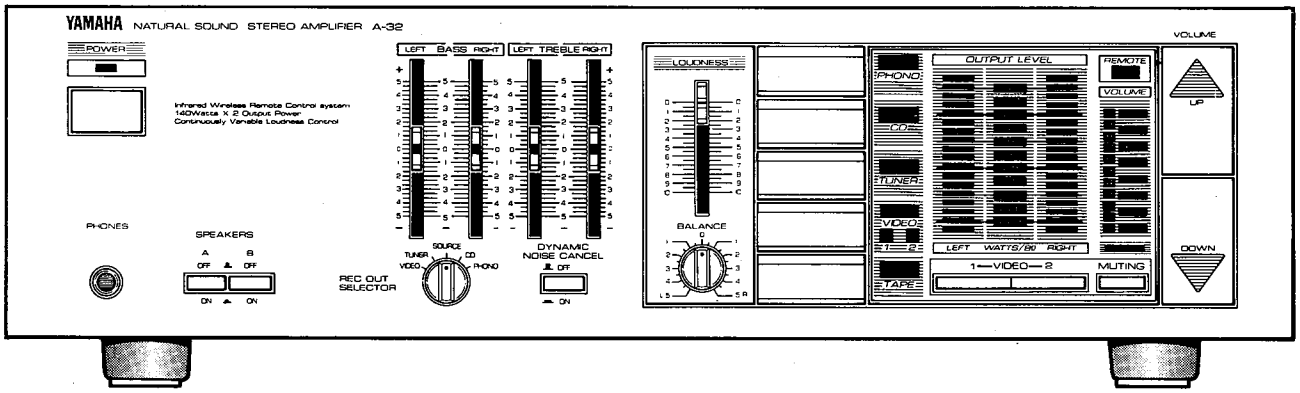
693

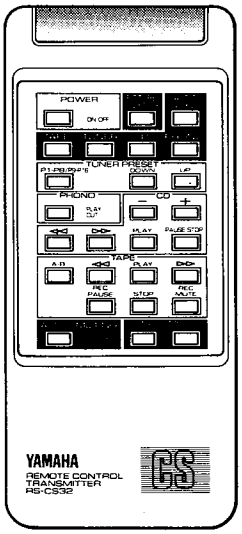
A-32

STEREO INTEGRATED AMPLIFIER

A-32

SERVICE MANUAL





IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherant to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

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100011

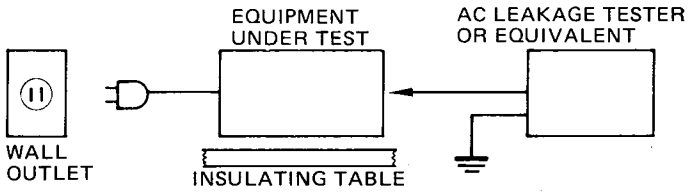
SINCE 1887 YAMAHA
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN
165K-217 Printed in Japan '86.2

■ TO SERVICE PERSONNEL

1. Critical Components Information.
   Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

2. Leakage Current Measurement (For 120V Model Only).
   When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15μF.
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



■ SPECIFICATIONS

Continuous Power Per Channel	
20Hz ~ 20kHz (0.05% THD, 8Ω)	140W
1kHz (0.1% THD, 8Ω)	162W
Dynamic Headroom	
8Ω	1.96dB
Dynamic Power Per Channel (IHF)	
8Ω	220W
6Ω	260W
4Ω	340W
Power Band Width	
0.1% THD, 70W, 8Ω	10Hz ~ 60Hz
Damping Factor	
(1kHz, 8Ω)	50
Input Sensitivity/Impedance	
Phono (MM)	2.5mV/47kΩ
CD/TAPE/TUNER/VIDEO 1, 2	150mV/47kΩ
Input Sensitivity (New IHF)	
Phono (MM)	0.21mV
CD/TAPE/TUNER/VIDEO 1, 2	12.7mV
Maximum Input Signal	
1kHz, 0.02% THD, Phono (MM)	150mV
Output Level/Impedance	
Rec Out	150mV/470Ω
Headphone Jack Rated Output/Impedance	
0.05% THD	0.79V/330Ω
Frequency Response	
20Hz ~ 20kHz AUX/TAPE/TUNER	±0.5dB
RIAA Equalization Deviation	
Phono (MM)	±0.5dB
Total Harmonic Distortion	
Phono to Rec Out (3V)	0.005%
AUX/TAPE/TUNER to SP Out (70W/8Ω)	0.02%
Intermodulation Distortion	
AUX/TAPE/TUNER Rated Output/8Ω	0.05%
1W/8Ω	0.02%
Signal to Noise Ratio (IHF-A-Network)	
Phono (5mV, Input Shorted)	79dB
CD/TAPE/TUNER/VIDEO 1, 2 (Input Shorted)	90dB
Signal to Noise Ratio (New IHF)	
Phono	68dB
CD/TAPE/TUNER/VIDEO 1, 2	72dB

Residual Noise (IHF-A-Network)	400μV
Channel Separation	
Phono (1kHz, Input Shorted, Vol −30dB)	70dB
(10kHz, Input Shorted, Vol −30dB)	60dB
AUX/TAPE (1kHz, Input 5.1kΩ terminated Vol −30dB)	70dB
(10kHz, Input 5.1kΩ terminated Vol −30dB)	60dB
Tone Control Characteristics	
BASS boost/cut	±12dB (60Hz)
turnover frequency	350Hz
TREBLE boost/cut	±12dB (16kHz)
turnover frequency	3.5kHz
Continuous Loudness Control (Level-related equalization)	
Attenuation	−20dB (1kHz)
Audio Muting	−20dB
Gain Tracking Error (0 to −60dB)	0.5dB
Power Supply	
U.S.A. & Canadian models	AC 120V 60Hz
Australian & British models	AC 240V 50Hz
Other model	AC 110/120/220/240V 50/60Hz
Power Consumption	
U.S.A. model	400W
Canadian model	400W
Australian & British models	700W
Other model	300W
AC Outlet (U)(C)(R)	
Switched x 4	100 max. total
Dimensions (W x H x D)	435 x 122.5 x 292 mm (17-1/8" x 4-7/8" x 11-1/2")
Weight	8.3kg (18 lbs 5 oz)

Specifications are subject to change without notice.

(U) ..... U.S.A. model
(C) ..... Canadian model
(A) ..... Australian model
(B) ..... British model
(R) ..... Other model

YAMAHA TECHNICAL BULLETIN
ELECTRONICS CORPORATION, USA

6660 ORANGETHORPE AVENUE BUENA PARK, CALIFORNIA 90620 MAIL ADDRESS: P.O. BOX 6660, BUENA PARK, CALIFORNIA 90622 PHONE: 1-800-4-YAMAHA

Effective Date: 5/19/86 **No. 71H**

MODEL: A-32 INTEGRATED AMPLIFIER

SERIAL NUMBERS AFFECTED: Below 103801

FUNCTION AFFECTED: Graphic Equalizer Connections

TYPE OF CHANGE

MANDATORY	OPTIONAL	FOR INFO ONLY
☐	☒	☐

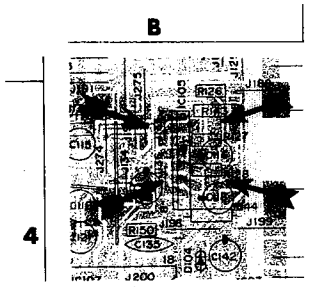
(To be performed to correct consumer complaint)

COMPLAINT: Hiss or noise is sometimes noticeable through the loudspeakers with the Graphic Equalizer connected through the ACCESSORY loop.

CAUSE: The Owner's Manual offers the option of connecting the Graphic Equalizer through the ACCESSORY loop or through the TAPE MONITOR loop. Though we sent out a memo to all Concert Systems Dealers which solves the noise problem, it has caused confusion with the interactive remote control for some people.

SOLUTION: For the consumer who insists on being able to connect the Graphic Equalizer through the ACCESSORY loop and the Cassette Deck through the A-32 TAPE loop, the following modification may be performed (as a YAMAHA warranty-covered customer service):

1. Change "flat amp" IC-105 to a "10 dB amp" by adding 4 resistors.
   a. Replace jumpers J-135 and J-136 with 2.2 k ohm resistors.
   b. Use holes adjacent to R-127 and R-128 to install 1 K ohm resistors from pin 2 to ground and pin 6 to ground.



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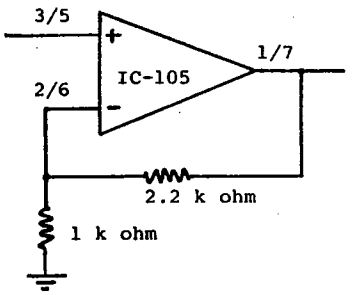
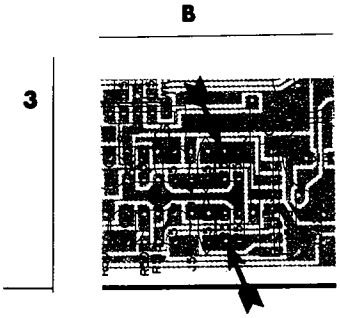


2. Lower the gain of "line amp" IC-501 by 10 dB by replacing the two 10 k ohm resistors at R-511 and R-512 with 2.2 k ohm resistors.



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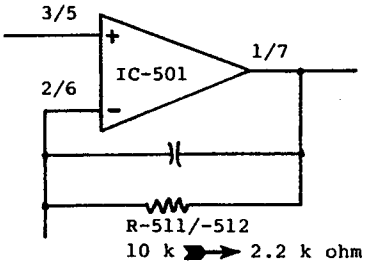
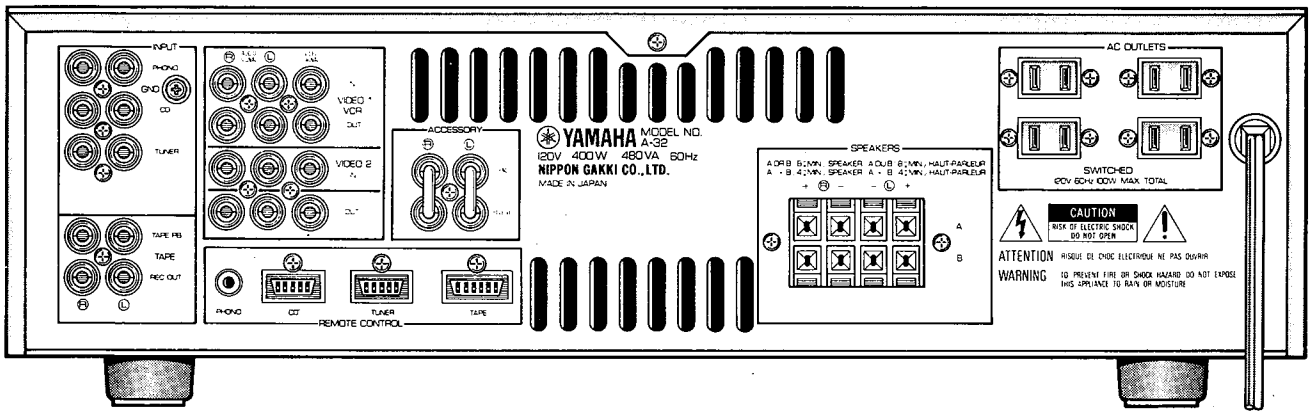
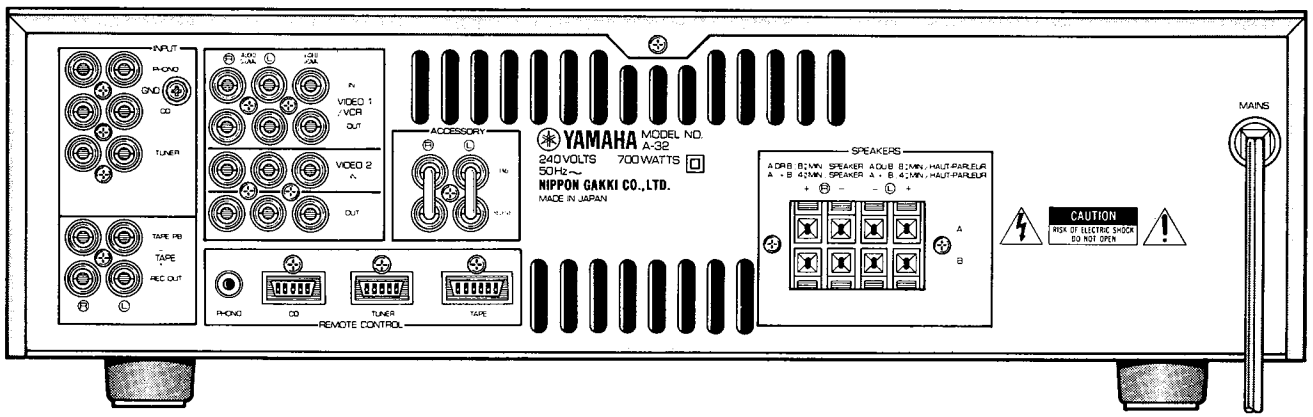


■ REAR PANELS

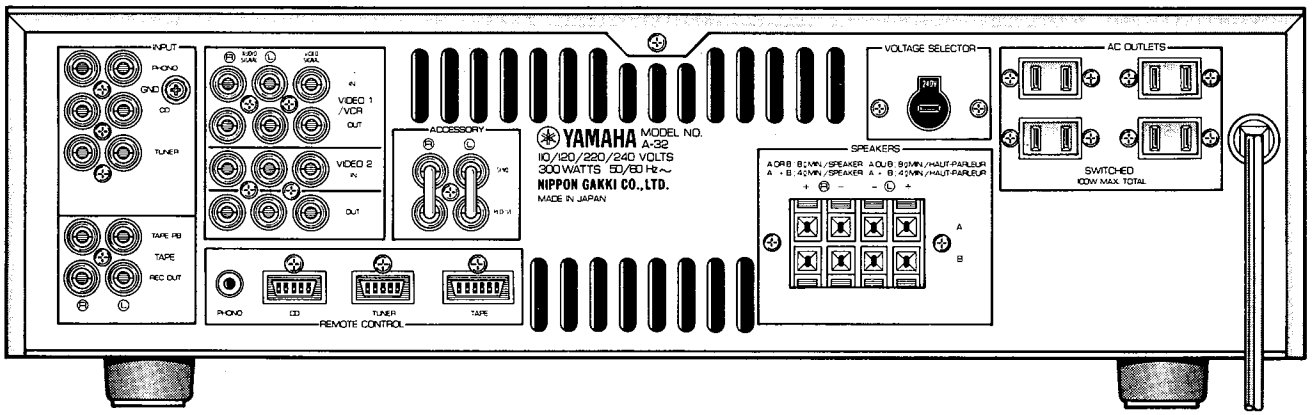
▼ U.S.A. & Canadian models



▼ Australian & British models



▼ Other model



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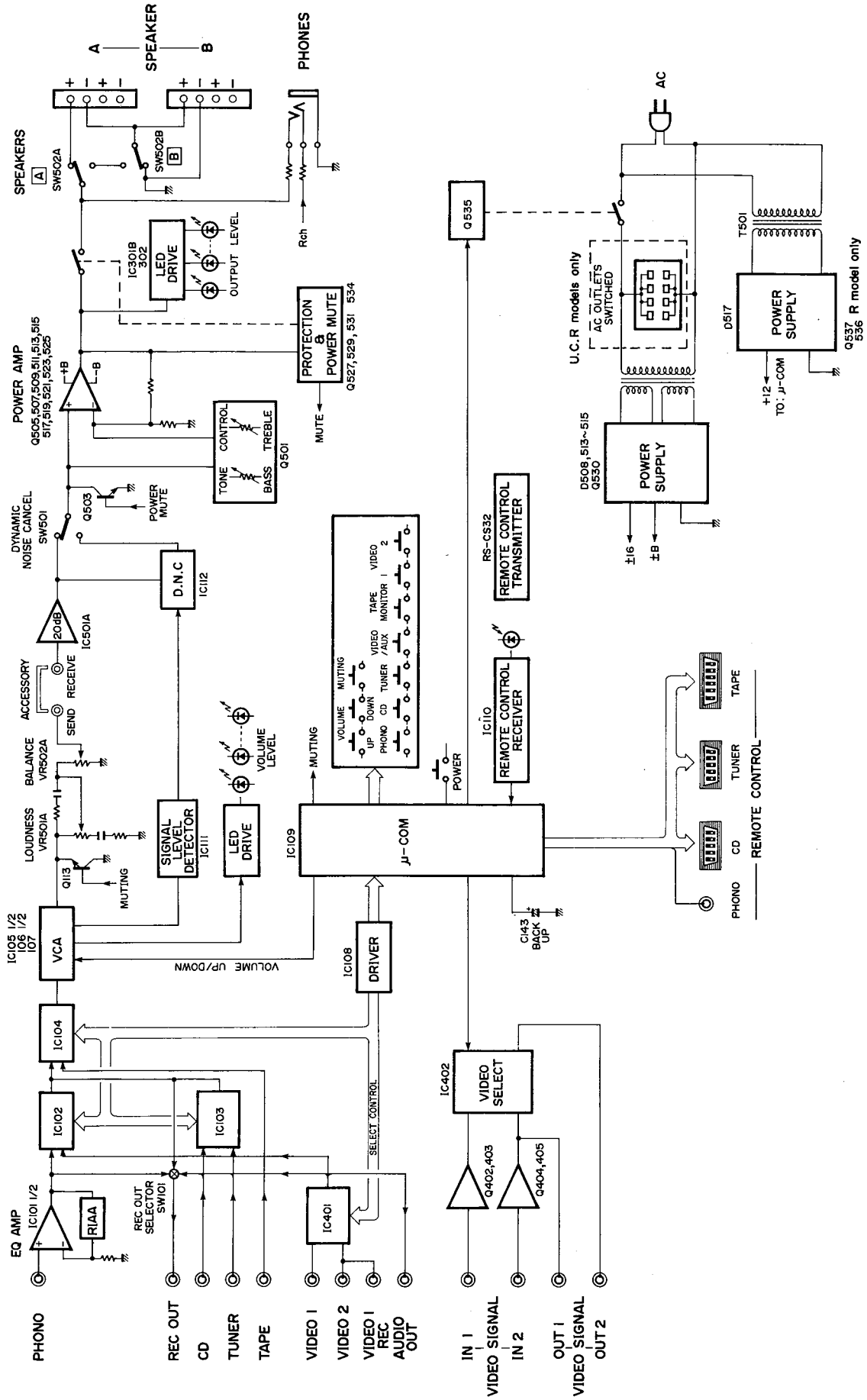
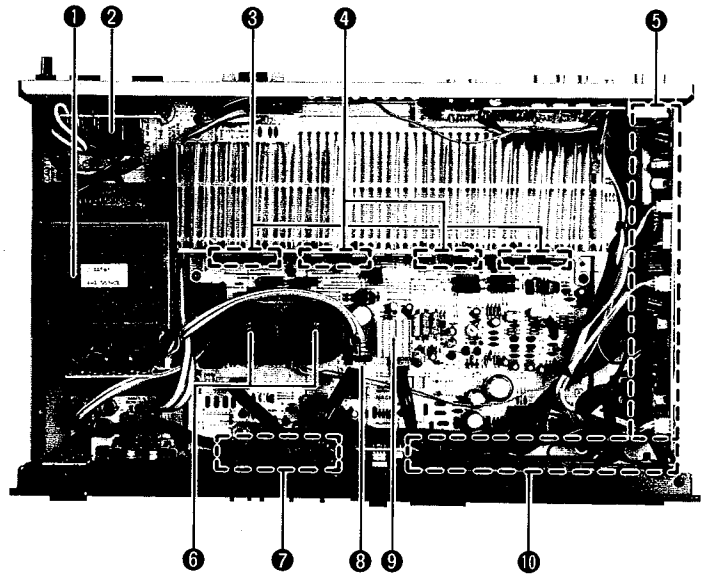
■BLOCK DIAGRAM



■ INTERNAL VIEW

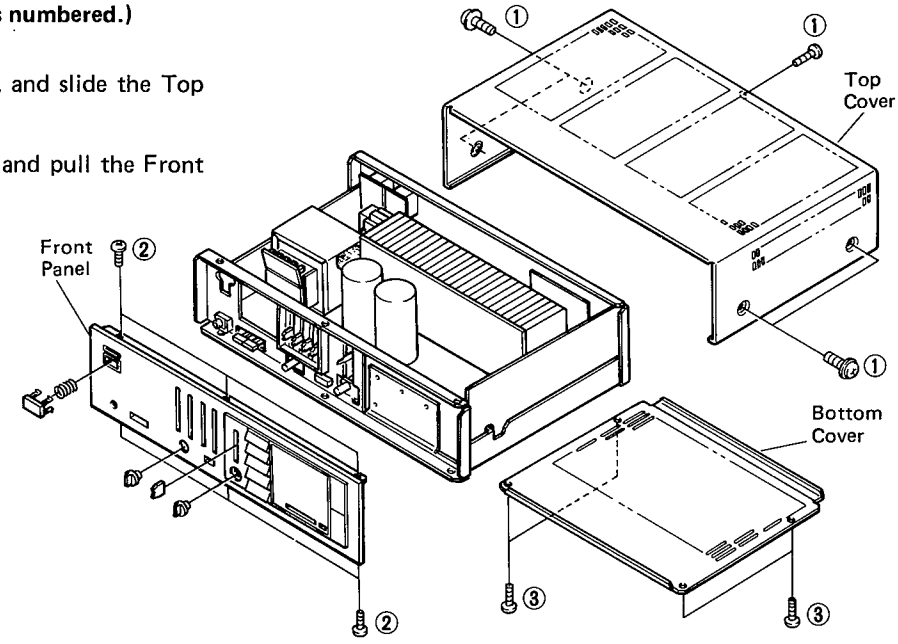


❶POWER TRANSFORMER
U.S.A. model: XA563001
Canadian model: XA564001
Australian & British models: XA565001
Other model: XA562001
❷POWER TRANSFORMER
U.S.A. & Canadian models: XA560001
Australian & British models: XA561001
Other model: XA559001
❸POWER TRANSISTOR
2SC3856: iX606470
❹POWER TRANSISTOR
2SA1492: iX606460
❺FUNCTION CIRCUIT BOARD (5)
❻ELECTROLYTIC CAPACITOR
12000μF 80V: VA900000
❼SLIDE VOLUME UNIT
❽MAIN CIRCUIT BOARD (1)
❾DIODE BRIDGE: iH001160
❿FUNCTION CIRCUIT BOARD (2)

■ DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

1. **Removal of Top Cover**
   Remove 5 screws (①) in Fig. 1, and slide the Top Cover back.
2. **Removal of Front Panel**
   Remove 6 screws (②) in Fig. 1, and pull the Front Panel forward.
3. **Removal of Bottom Cover**
   Remove 4 screws (③) in Fig. 1.

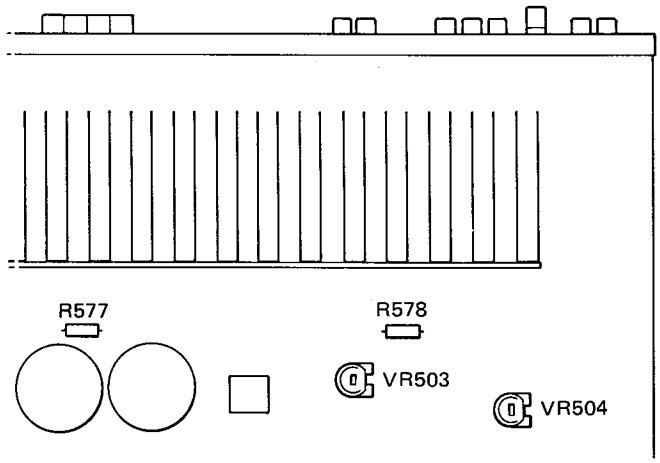


■ ADJUSTMENTS

• **IDLING CURRENT ADJUSTMENT**

When replacing the power and drive transistors, adjust idling current. After the power has been turned on, age about 5 minutes in non loaded condition. Adjust VR503 (Lch) and VR504 (Rch) so that the voltage across the terminals of R577 and 578 come to 6mV ± 2mV DC.

	Test points	Adjustment points	Rating
Lch	Across the terminals of R577	VR503	6mV ± 2mV DC.
Rch	Across the terminals of R578	VR504	6mV ± 2mV DC.



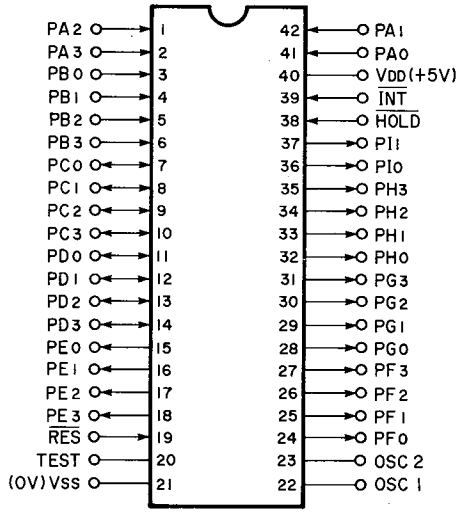
■μ-COM DATA

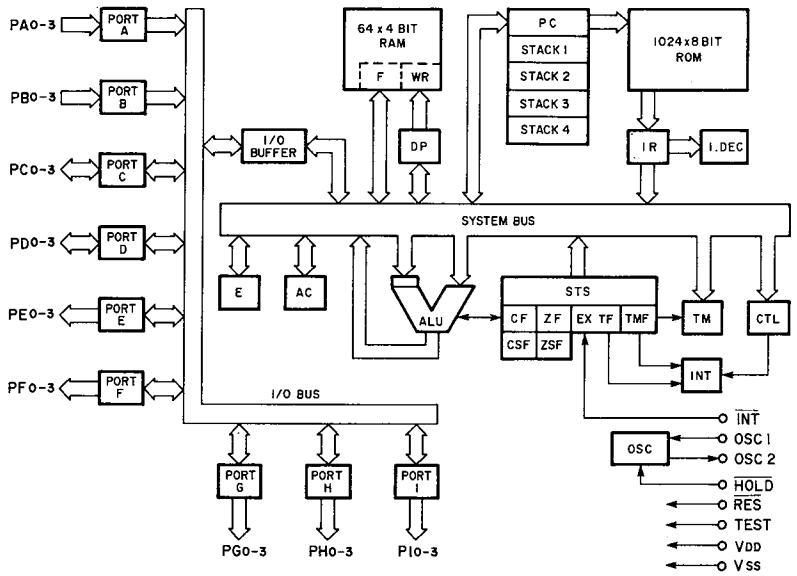
- **IC109: A.V Controller V1.0 3024 (LC6505C-3024)**

1-chip type 4-bit microcomputer with incorporates 1024 x 8 bit ROM (for programming) and 64 x 4 bit RAM (for data memory)

Terminal No.	Description	I/O	Function
1	PA_2	IN	INPUT port $A_0 \sim A_3$ Input by 4 bit and decision by 1 bit for branch are possible. Also used for HALT mode cancel request input.
2	PA_3		
3	PB_0	IN	INPUT port $B_0 \sim B_3$ Input by 4 bit and decision by 1 bit for branch are possible.
4	PB_1		
5	PB_2		
6	PB_3		
7	PC_0	IN/OUT	IN/OUT common port $C_0 \sim C_3$ When INPUT, input by 4 bit and decision by 1 bit for branch are possible. When OUTPUT, output by 4 bit and set or reset by 1 bit are possible.
8	PC_1		
9	PC_2		
10	PC_3		
11	PD_0	IN/OUT	IN/OUT common port $D_0 \sim D_3$ When INPUT, input by 4 bit and decision by 1 bit for branch are possible. When OUTPUT, output by 4 bit and set or reset by 1 bit are possible.
12	PC_1		
13	PD_2		
14	PD_3		
15	PE_0	OUT	OUTPUT port $E_0 \sim E_3$ Output by 4 bit and set or reset by 1 bit are possible. Input of output latch content by 4 bit and decision of output latch by 1 bit for branch are possible.
16	PE_1		
17	PE_2		
18	PE_3		
19	$\overline{RES}$	IN	Reset input terminal
20	TEST	IN	LSI test terminal usually connected to Vss (0V).
21	Vss	—	Connected to 0V of power supply.
22	OSC 1	IN	Used by supplying external clock. Also used with OSC2 terminal and C.R. ceramic oscillator when using internal clock oscillation.
23	OSC 2	OUT	Attached to oscillatory circuit for internal clock oscillation.

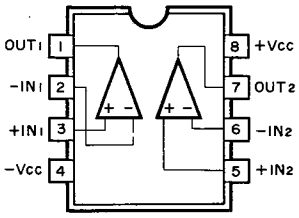
Terminal No.	Description	I/O	Function
24	PF_0	OUT	OUTPUT port $F_0 \sim F_3$ Output by 4 bit and set or reset by 1 bit are possible. Input of output latch content by 4 bit and decision of output latch by 1 bit for branch are possible.
25	PF_1		
26	PF_2		
27	PF_3		
28	PG_0	OUT	OUTPUT port $G_0 \sim G_3$ Output by 4 bit and set or reset by 1 bit are possible. Input of output latch content by 4 bit and decision of output latch by 1 bit for branch are possible.
29	PG_1		
30	PG_2		
31	PG_3		
32	PH_0	OUT	OUTPUT port $H_0 \sim H_3$ Output by 4 bit and set or reset by 1 bit are possible. Input to output latch content by 4 bit and decision of output latch by 1 bit for branch are possible.
33	PH_1		
34	PH_2		
35	PH_3		
36	PI_0	OUT	OUTPUT port I_0, I_1 Output by 2 bit and set or reset by 1 bit are possible. Input of output latch content by 2 bit and decision of output latch by 1 bit for branch are possible.
37	PI_1		
38	$\overline{HOLD}$	IN	HOLD mode request input terminal
39	$\overline{INT}$	IN	Interrupt request input terminal
40	VDD	IN	Power supply terminal usually connected to +5V terminal.
41	PA_0	IN	INPUT port $A_0 \sim A_3$ Input by 4 bit and decision by 1 bit branch are possible. Also used for HALT mode cancel request input.
42	PA_1		



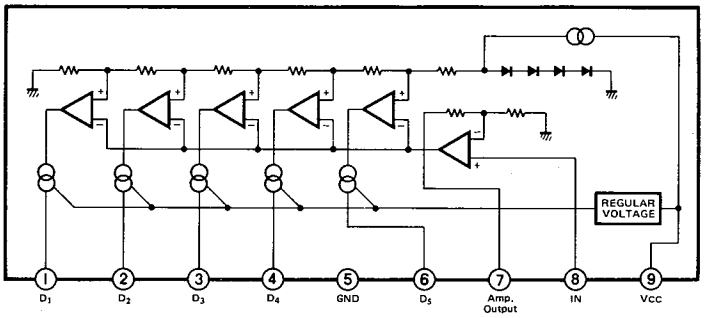


IC BLOCK

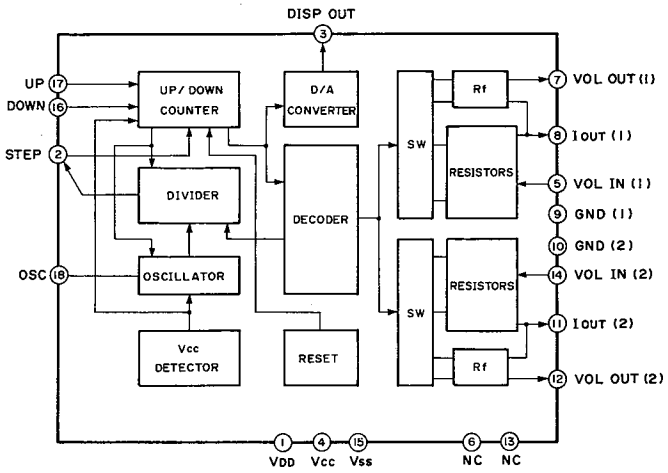
IC101, 105, 106, 111, 301, 501: M5218L



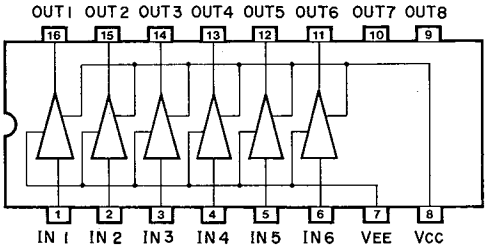
IC302, 303: BA6144



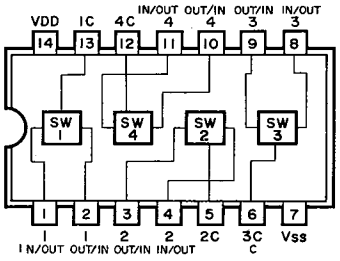
IC107: MN6632A



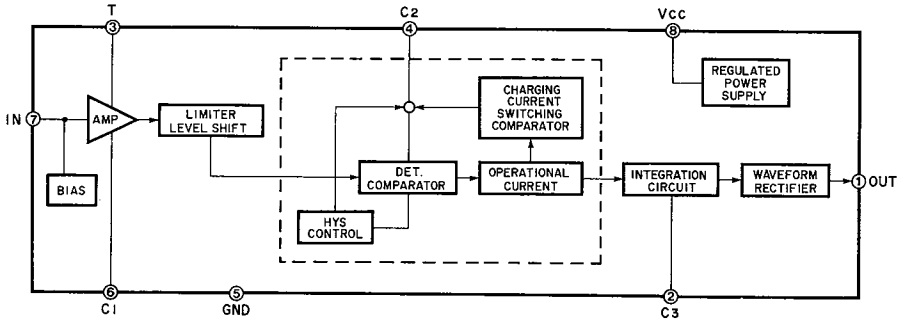
IC108: LB1294



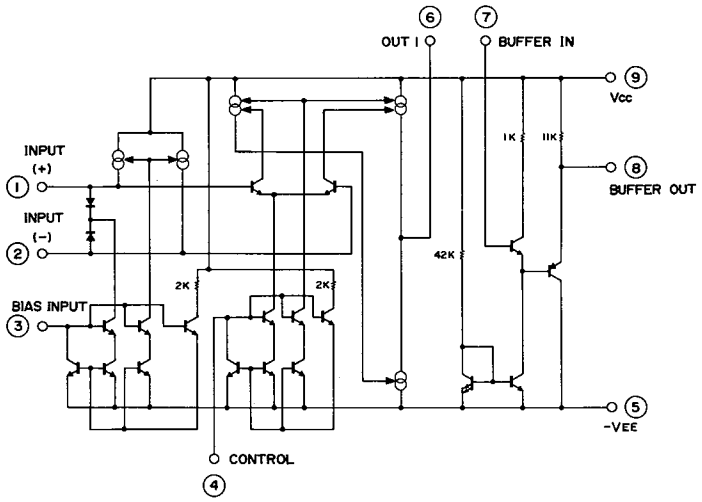
IC102 ~ 104, 401: LC4966



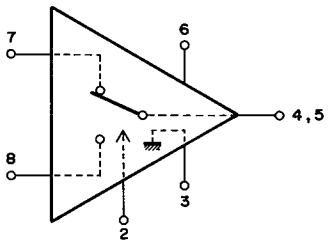
IC110: BA6340



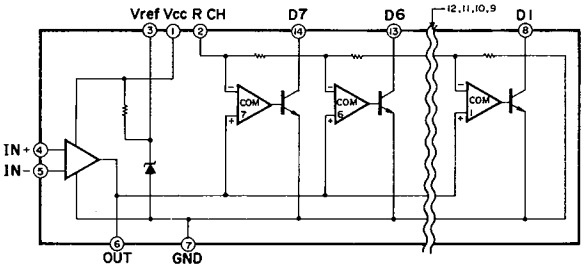
IC112, 113: BA6110



IC402: BA7001



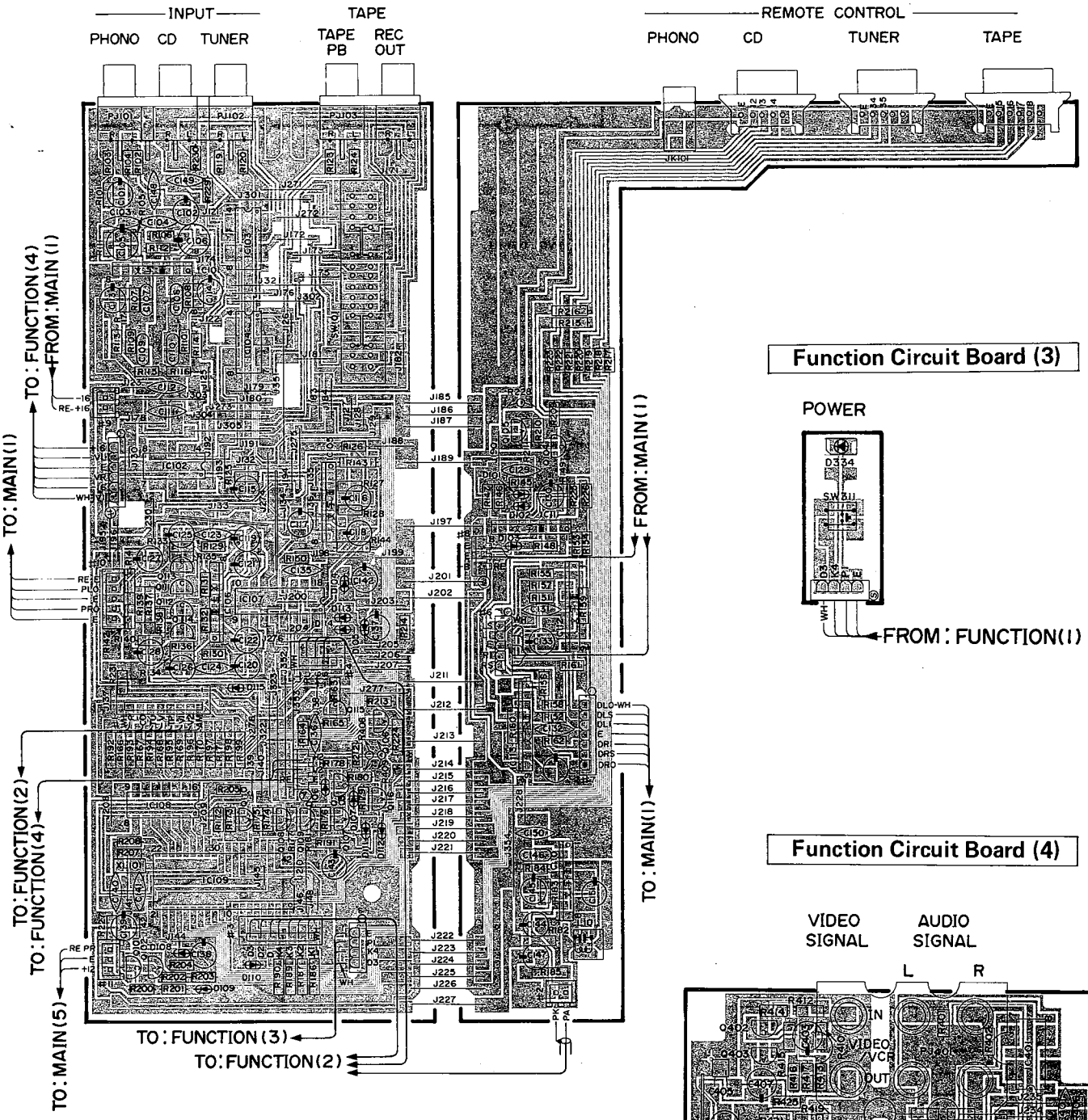
IC304: LB1417



■ PRINTED CIRCUIT BOARD (Pattern side)

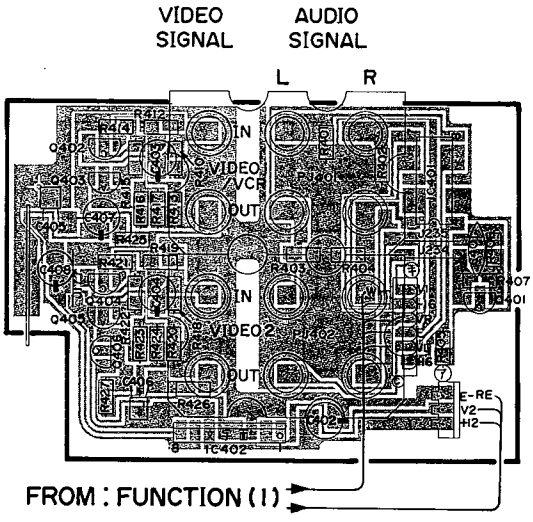
Note)
文字面 : Component side

Function Circuit Board (1)



Function Circuit Board (3)

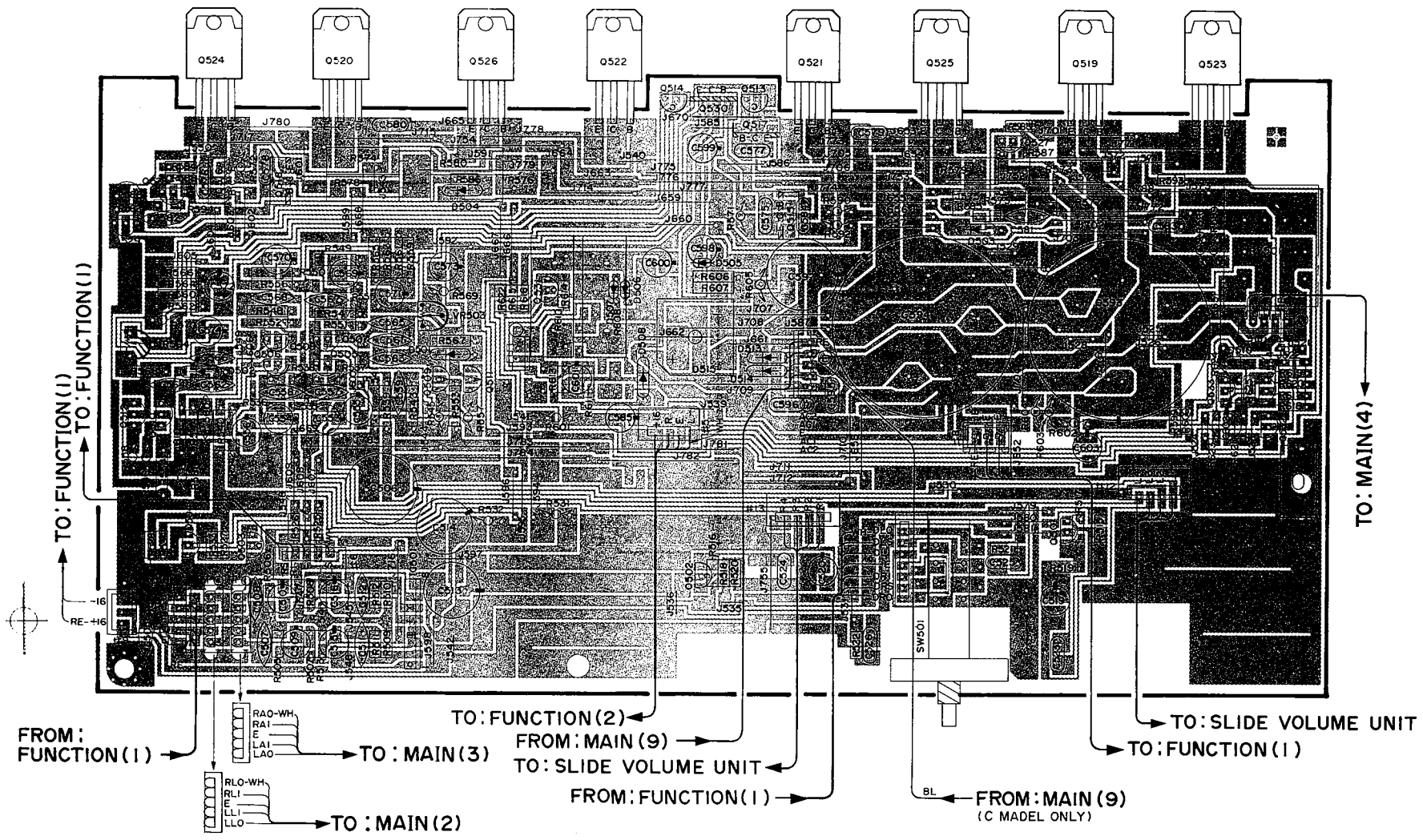
Function Circuit Board (4)



■PRINTED CIRCUIT BOARD(Pattern side)

Note)
文字面 : Component side

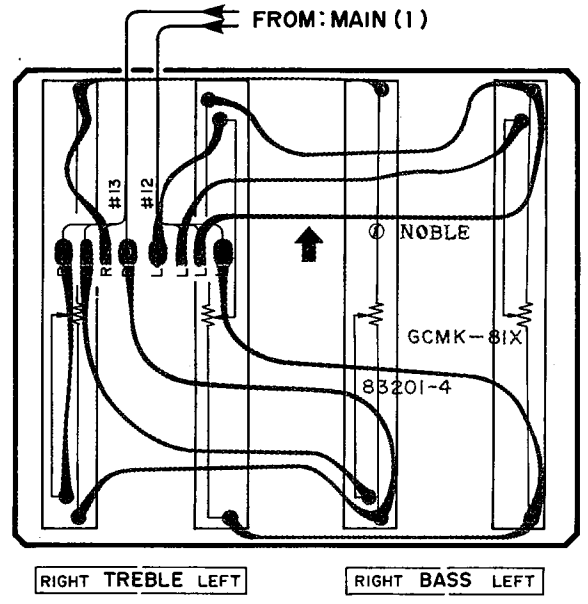
Main Circuit Board (1)



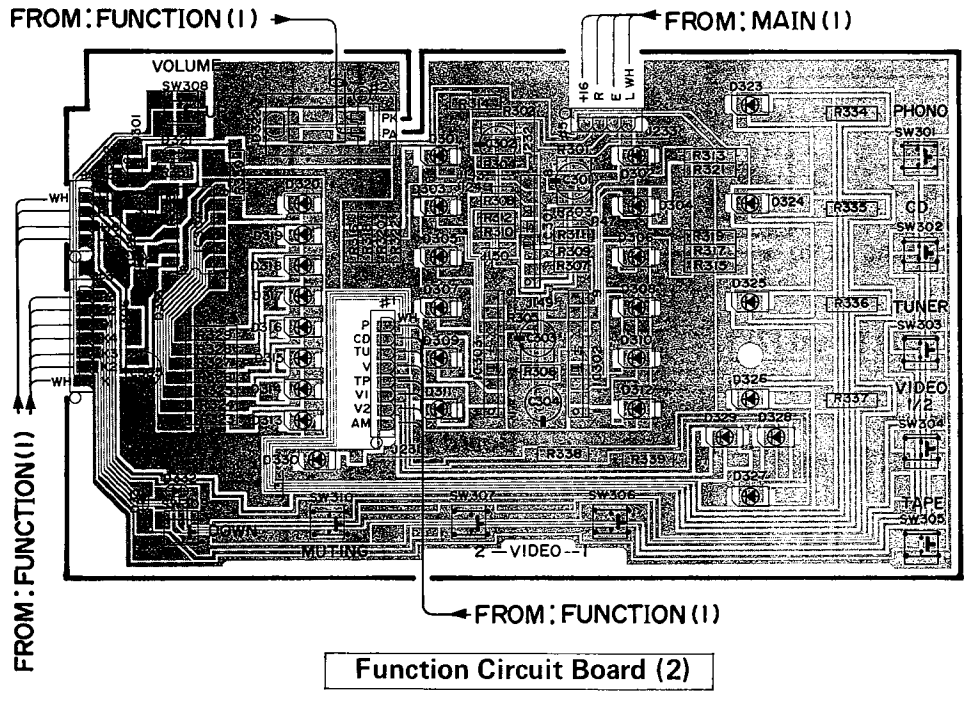
Note: * marked

	R	U	A, B	C
J731, 732	SHORT	SHORT	OPEN	SHORT
J631 ~ 633	SHORT	SHORT	OPEN	SHORT
J681	SHORT	SHORT	OPEN	SHORT
C610	1/50	OPEN	OPEN	OPEN
SW503	1KA8VA96180	OPEN	OPEN	OPEN
F501	10A 250V	10A 250V	T4.0A 250V	10A 250V
F502	T5A 250V	OPEN	OPEN	OPEN
T501	XA559	XA560	XA561	XA560
C608	470/63	470/25	470/25	470/25
J561	OPEN	SHORT	SHORT	SHORT
C609	22/16	OPEN	OPEN	OPEN
D516	HZ12B2	OPEN	OPEN	OPEN
R630	18K	OPEN	OPEN	OPEN
G536	2SD1485	OPEN	OPEN	OPEN
J756	OPEN	OPEN	OPEN	SHORT
J756, 757	SHORT	SHORT	SHORT	OPEN
AC Outlet	LB10145	LB10146	OPEN	LB10146
Q537	2SC2240 (GR, BL)	OPEN	OPEN	OPEN

Slide Volume Unit

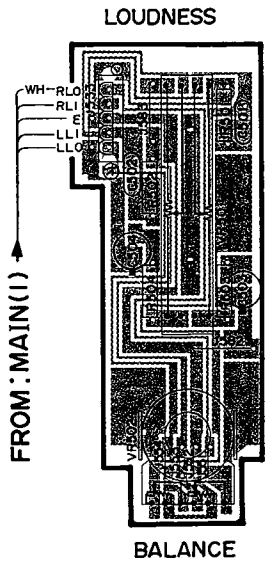


Don't disassemble the Slide Volume Unit.
It must be replaced with the VA911800.

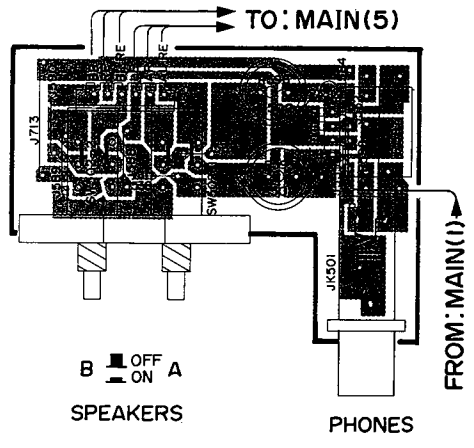


Function Circuit Board (2)

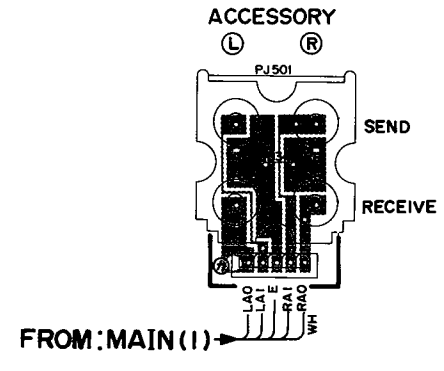
Main Circuit Board (2)



Main Circuit Board (4)

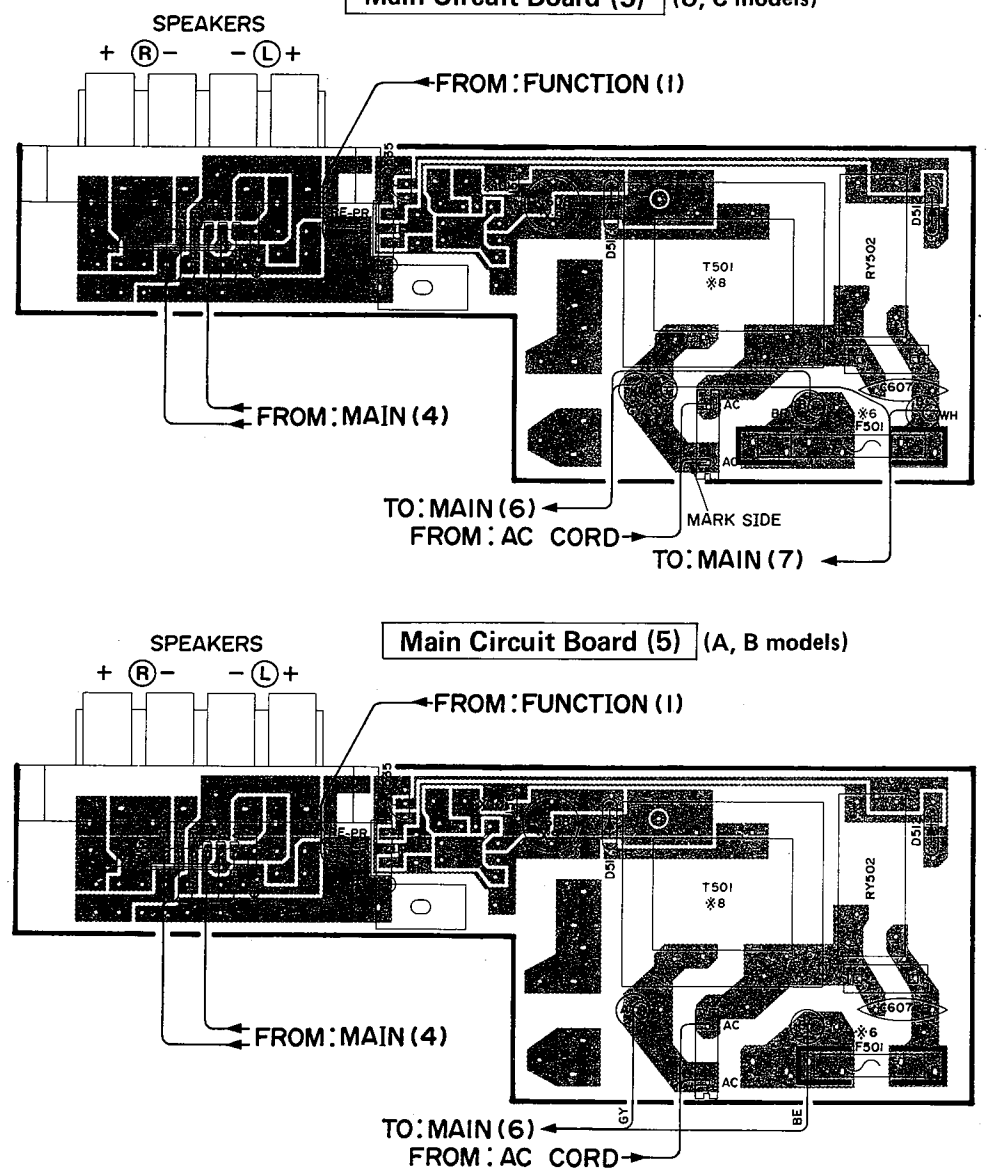


Main Circuit Board (3)

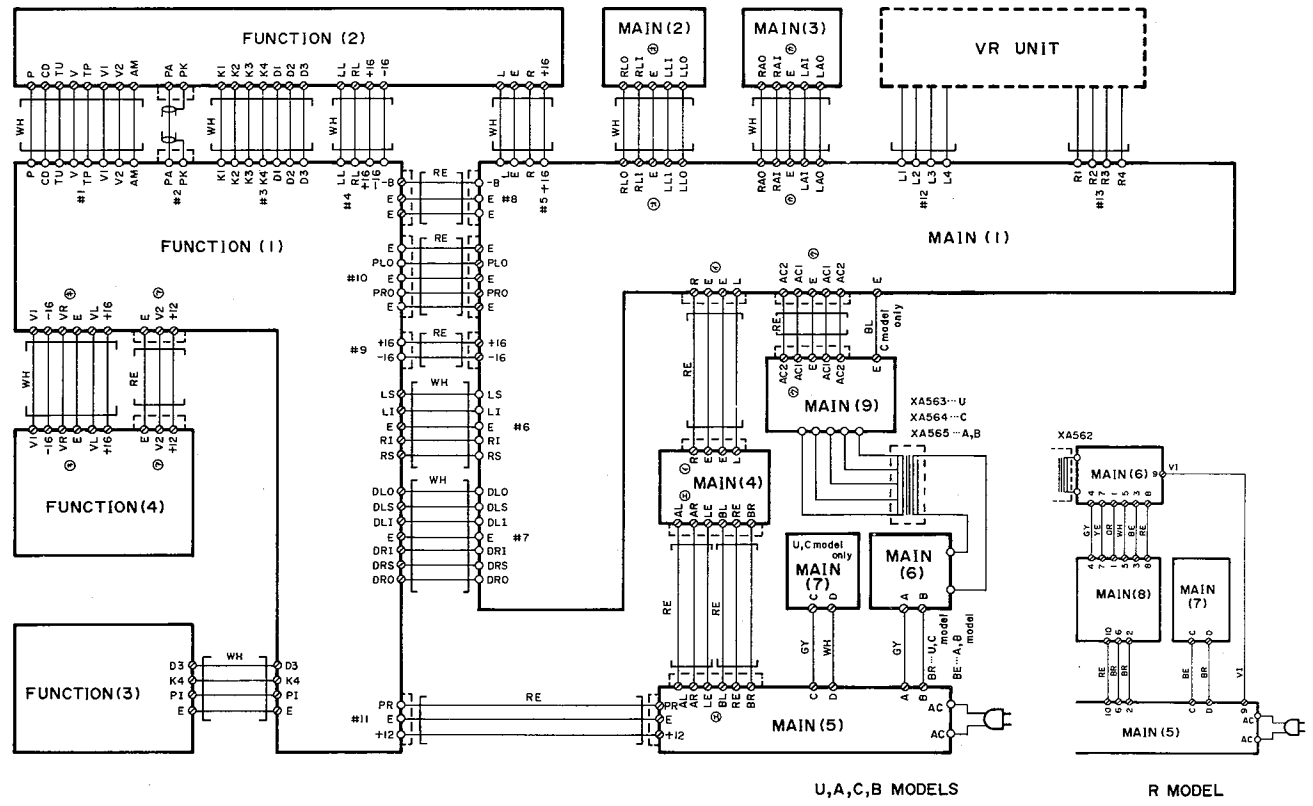


■ PRINTED CIRCUIT BOARD(Pattern side)

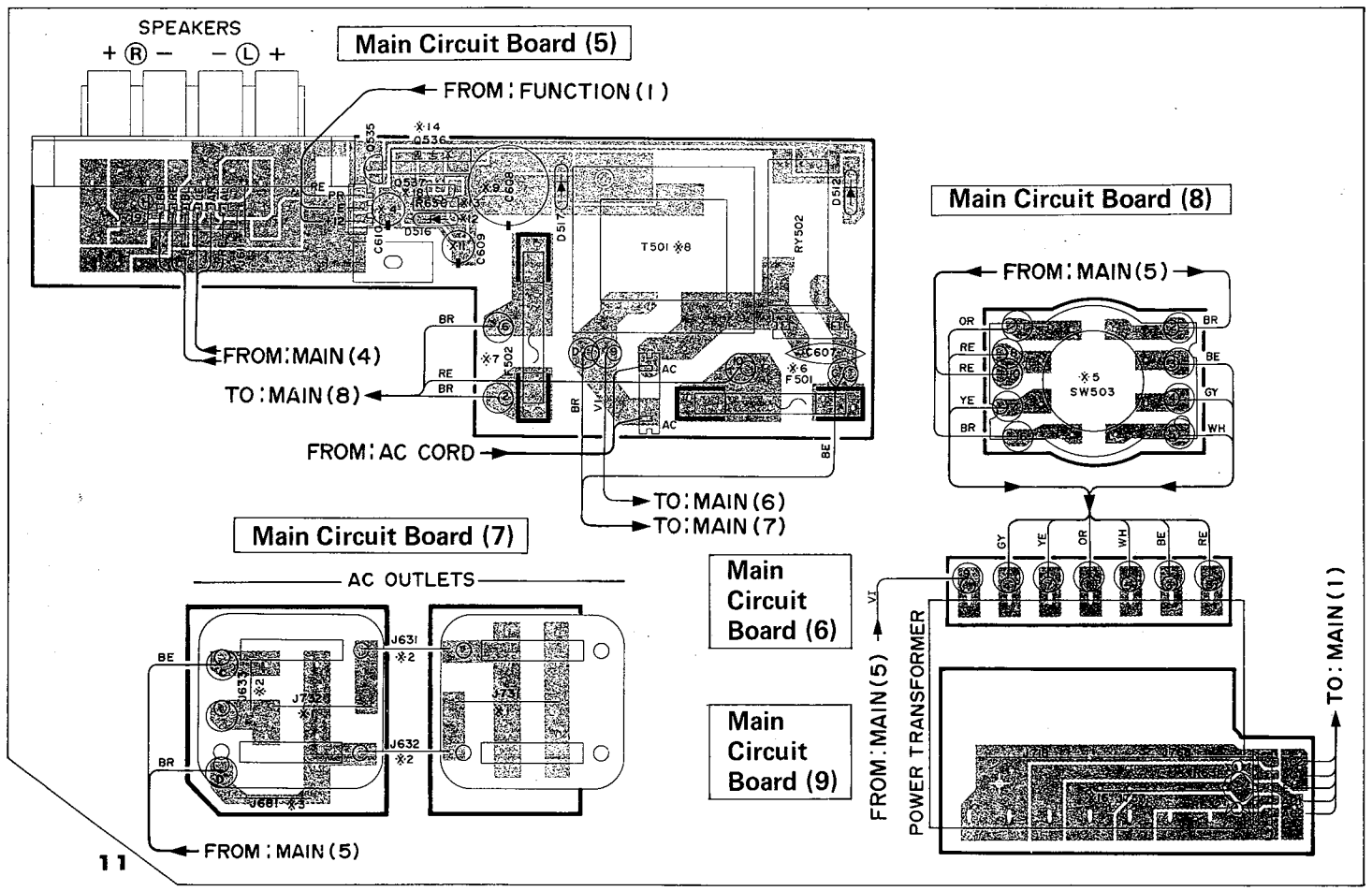
U, A, C, B models



■ WIRING



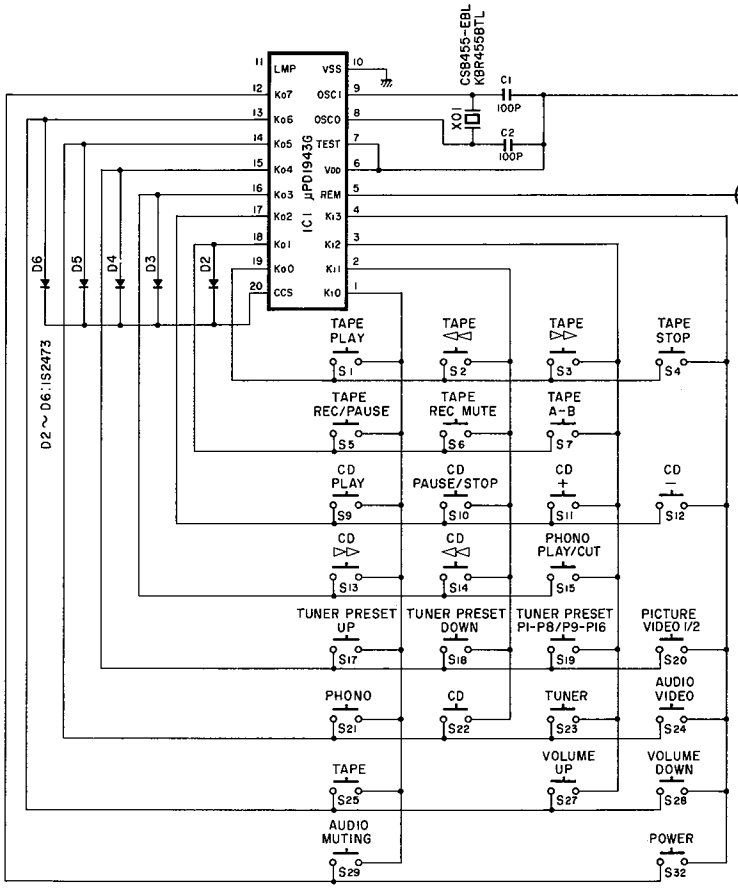
R model



RS-CS32

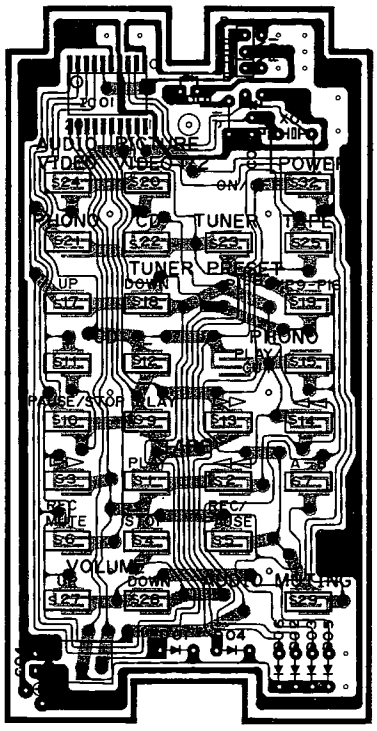
REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM

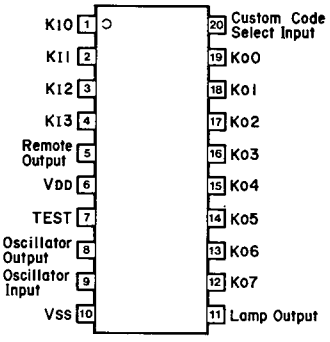


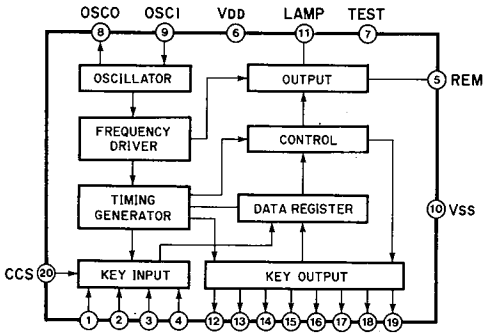
FUNCTION		CUSTOM CODE 0 1 2 3 4 5 6 7	DATA CODE 0 1 2 3 4 5 6 7
POWER		0 1 1 1 1 0 1 0	1 1 1 1 1 0 0 0
AUDIO MUTING		0 1 1 1 1 0 1 0	0 0 1 1 1 0 0 0
VOLUME DOWN		0 1 1 1 1 0 1 0	1 1 0 1 1 0 0 0
VOLUME UP		0 1 1 1 1 0 1 0	0 1 0 1 1 0 0 0
TAPE		0 1 1 1 1 0 1 0	0 0 0 1 1 0 0 0
AUDIO VIDEO		0 1 1 1 1 0 1 0	1 1 1 0 1 0 0 0
TUNER		0 1 1 1 1 0 1 0	0 1 1 0 1 0 0 0
CD		0 1 1 1 1 0 1 0	1 0 1 0 1 0 0 0
PHONO		0 1 1 1 1 0 1 0	0 0 1 0 1 0 0 0
PICTURE VIDEO 1/2		0 1 1 1 1 0 1 0	1 1 0 0 1 0 0 0
TUNER PRESET	P1-P8/P9-P16	0 1 1 1 1 0 1 0	0 1 0 0 1 0 0 0
	DOWN	0 1 1 1 1 0 1 0	1 0 0 0 1 0 0 0
	UP	0 1 1 1 1 0 1 0	0 0 0 0 1 0 0 0
PHONO PLAY/CUT		0 1 1 1 1 0 1 0	0 1 1 1 0 0 0 0
CD	◀◀	0 1 1 1 1 0 1 0	1 0 1 1 0 0 0 0
	▶▶	0 1 1 1 1 0 1 0	0 0 1 1 0 0 0 0
	−	0 1 1 1 1 0 1 0	1 1 0 1 0 0 0 0
	+	0 1 1 1 1 0 1 0	0 1 0 1 0 0 0 0
	PAUSE/STOP	0 1 1 1 1 0 1 0	1 0 0 1 0 0 0 0
	PLAY	0 1 1 1 1 0 1 0	0 0 0 1 0 0 0 0
TAPE	A-B	0 1 1 1 1 0 1 0	0 1 1 0 0 0 0 0
	REC MUTE	0 1 1 1 1 0 1 0	1 0 1 0 0 0 0 0
	REC/PAUSE	0 1 1 1 1 0 1 0	0 0 1 0 0 0 0 0
	STOP	0 1 1 1 1 0 1 0	1 1 0 0 0 0 0 0
	▶▶	0 1 1 1 1 0 1 0	0 1 0 0 0 0 0 0
	◀◀	0 1 1 1 1 0 1 0	1 0 0 0 0 0 0 0
	PLAY	0 1 1 1 1 0 1 0	0 0 0 0 0 0 0 0

■ PRINTED CIRCUIT BOARD



- IC1: μPD1943G





PARTS LIST

■ELECTRICAL PARTS

■WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS list. For the parts No. of the carbon resistor, refer to p. 23.

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク	
※		*NA 08 96 70*	*Main Circuit Board*		メインシート			R		
※		*NA 08 96 80*	〃		〃			U		
※		*NA 08 96 90*	〃		〃			A,B		
※		*NA 08 97 00*	〃		〃			C		
		FG 41 03 00	Ceramic Cap.	3pF 50V	セラコン	C565~568				
		FG 41 12 20	〃	22pF 50V	〃	C561~564				
		FG 41 21 00	〃	100pF 50V	〃	C507,508,511,512, 557,558				
		FG 41 24 70	〃	470pF 50V	〃	C581,582				
		FG 41 26 80	〃	680pF 50V	〃	C559,560				
※		VA 89 08 00	〃	0.01μF400V	〃	C607				⚠
		FZ 00 41 30	Semiconductive Ceramic Cap.	0.1μF 25V	半導体セラコン	C505				
		FZ 00 46 80	Electrolytic Cap.	680μF 80V	ケミコン	C506				
※		VA 90 00 00	〃	12000μF 80V	ブロックケミコン	C593,594				
		FA 15 36 80	Mylar Cap.	6800pF 50V	マイラーコン	C525,526,501,502				
		FA 15 43 90	〃	0.039μF 50V	〃	C523,524				
		FA 15 44 70	〃	0.047μF 50V	〃	C583,584				
		FA 15 51 00	〃	0.1μF 50V	〃	C579,580				
		UW 84 84 70	Electrolytic Cap.	470μF 25V	ケミコン	C608		U,A,C,B		
		UW 87 84 70	〃	470μF 63V	〃	〃		R		
		UW 83 91 00	〃	1000μF 16V	〃	C513,514				
		UW 84 91 00	〃	1000μF 25V	〃	C597				
		UH 11 81 00	〃	100μF 6.3V	〃	C603				
		UH 13 72 20	〃	22μF 16V	〃	C609		R		
		UH 14 74 70	〃	47μF 25V	〃	C569,570,585,598,515, 516,600,602				
		UJ 16 71 00	〃	10μF 50V	〃	C601				
		UJ 16 53 30	〃	0.33μF 50V	〃	C503,504				
		UH 16 61 00	〃	1μF 50V	〃	C610		R		
		UH 16 61 00	〃	1μF 50V	〃	C573,574,599				
		UH 16 63 30	〃	3.3μF 50V	〃	C509,510,519,520,586, 553~556				
		UH 16 74 70	〃	47μF 50V	〃	C571,572				
		UT 45 21 00	Polypropylene Film Cap.	100pF100V	ポリプロコン	C575~578				
		UT 45 41 00	〃	0.01μF100V	〃	C595,596				
※		GD 90 04 70	Coil	1.7μF	アウトプットコイル	L501,502				
※		XA 55 90 01	Power Transformer		電源トランス	T501		R		⚠
※		XA 56 00 01	〃		〃	〃		U,C		⚠
※		XA 56 10 01	〃		〃	〃		A,B		⚠
※		VA 95 70 00	Metal Oxide Film Resistor	0.33Ω 2W	酸金抵抗	R573~580				⚠
※		VA 95 69 00	〃	330Ω 3W	〃	R597,598				
		HM 05 61 80	Wire Wound Resistor	1.8kΩ 5W Mφ-4P	セメント抵抗	R608,610				
		HV 45 32 20	Flame Proof Carbon Resistor	2.2Ω 1/4W	不燃化カーボン抵抗	R605				⚠
		HV 45 34 70	〃	4.7Ω 1/4W	〃	R531~532,595,596				
		HV 45 31 00	〃	1Ω 1/4W	〃	R631,632				
		HV 45 41 00	〃	10Ω 1/4W	〃	R557,558,589~592				⚠
		HV 45 42 20	〃	22Ω 1/4W	〃	R581,601				⚠
		HV 45 53 30	〃	330Ω 1/4W	〃	R571,572				⚠
		HV 45 53 90	〃	390Ω 1/4W	〃	R602~604				
		HV 45 61 00	〃	1kΩ 1/4W	〃	R569,570				
		HV 45 62 20	〃	2.2kΩ 1/4W	〃	R545,546				

※New Parts（新規部品）

	Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク	
※		VA 93 01 00	Potentiometer	10kB×2 可変抵抗器	VR501				
※		VA 93 02 00	〃	5kMN 〃	VR502				
		VA 78 77 00	Pre-Set Potentiometer	B2.2kΩ 半固定抵抗	VR503,504				
		iA 09 70 00	Transistor	2SA970(GR,BL) トランジスタ	Q509,510,529				
※		VA 85 47 00	〃	2SA1370 〃	Q511,512				⚠
		iC 22 40 00	〃	2SC2240(GR,BL) 〃	Q513,514				
		iC 22 40 00	〃	2SC2240(GR,BL) 〃	Q537		R		
		iC 22 40 00	〃	2SC2240(GR,BL) 〃	Q505～508,527,528, 531～534				
		iC 26 03 10	〃	2SC2603 (E,F) 〃	Q501～504,535 } Inter-changeable				
		iX 60 31 80	〃	2SC3312 (R,S,T) 〃	〃 } Inter-changeable				
※		VB 22 27 00	〃	2SD1485 〃	Q536		R		
※		VA 91 77 00	〃	2SD1666 〃	Q530				⚠
		iA 13 06 10	〃	2SA1306 〃	Q517,518				⚠
		iC 32 98 10	〃	2SC3298 〃	Q515,516				⚠
		iF 00 06 70	Diode	1S2473 ダイオード	D512 } Inter-changeable				
		iF 00 00 40	〃	1S1555 〃	〃 } Inter-changeable				
		iF 00 14 00	〃	1SS82 〃	D501～504,508,510				⚠
		iH 00 14 30	〃	1SR35-100A 〃	D513,514,517				
※		iF 00 89 30	Zener Diode	MTZ-16A ツェナーダイオード	D505	A-28			
		iF 00 35 50	〃	HZ12B2 〃	D516		R		
		iF 00 80 30	〃	MTZ7.5C 〃	D506,507				
		iH 00 11 60	Diode Bridge	4D4B41 ダイオードブリッジ	D515				⚠
		iG 05 82 10	IC	M5218L IC	IC501				
		KA 80 28 90	Push Switch	SUN NS 4-2 プッシュスイッチ	SW501				
		KA 80 37 90	〃	SUF NS 2-2 〃	SW502				
※		VA 96 18 00	Voltage Selector	電圧切換器	SW503		R		⚠
		KB 00 04 00	Fuse	T5.0A 250V ヒューズ	F502		R		⚠
		KB 00 07 90	〃	T4.0A 250V 〃	F501		A,B		⚠
		KB 00 13 90	〃	10A 250V 〃	〃		U,C		⚠
		KB 00 14 90	〃	10A 250V 〃	〃		R		⚠
		KC 00 19 10	Relay	DH12D1-0M リレー	RY502				
※		VA 92 58 00	〃	MS48D4-0ZJ DC48V 〃	RY501				
※		LB 30 17 60	Head Phone Jack	ヘッドホンジャック	JK501				
※		VB 04 99 00	Pin Jack	4P ピンジャック	PJ501				
		LA 00 21 40	Lapping Terminal	P=10 2Pi-Type i型ラッピング端子板					
		LA 00 38 70	〃	P=10 2P WTM-Type WTM型ラッピング端子板					
		LA 00 54 60	Push Terminal	8P プッシュターミナル					
		LB 20 18 80	Pin,Fuse Holder	PC-FHI ヒューズホルダーピン					
		LB 91 80 30	Base Pin	3P i-Type XHベースピンi型					
※		VA 82 65 00	Connector	4P JP-3 ジャンパーコネクター					
※		VA 82 66 00	〃	5P JP-3 〃					
※		VA 82 68 00	〃	7P JP-3 〃					
		LB 40 14 50	AC Outlet	ACアウトレット			R		⚠
		LB 40 14 60	〃	〃			U,C		⚠
※		VA 72 55 00	Cable Holder	5P パラレルケーブルホルダー					

※New Parts（新規部品）

A-32

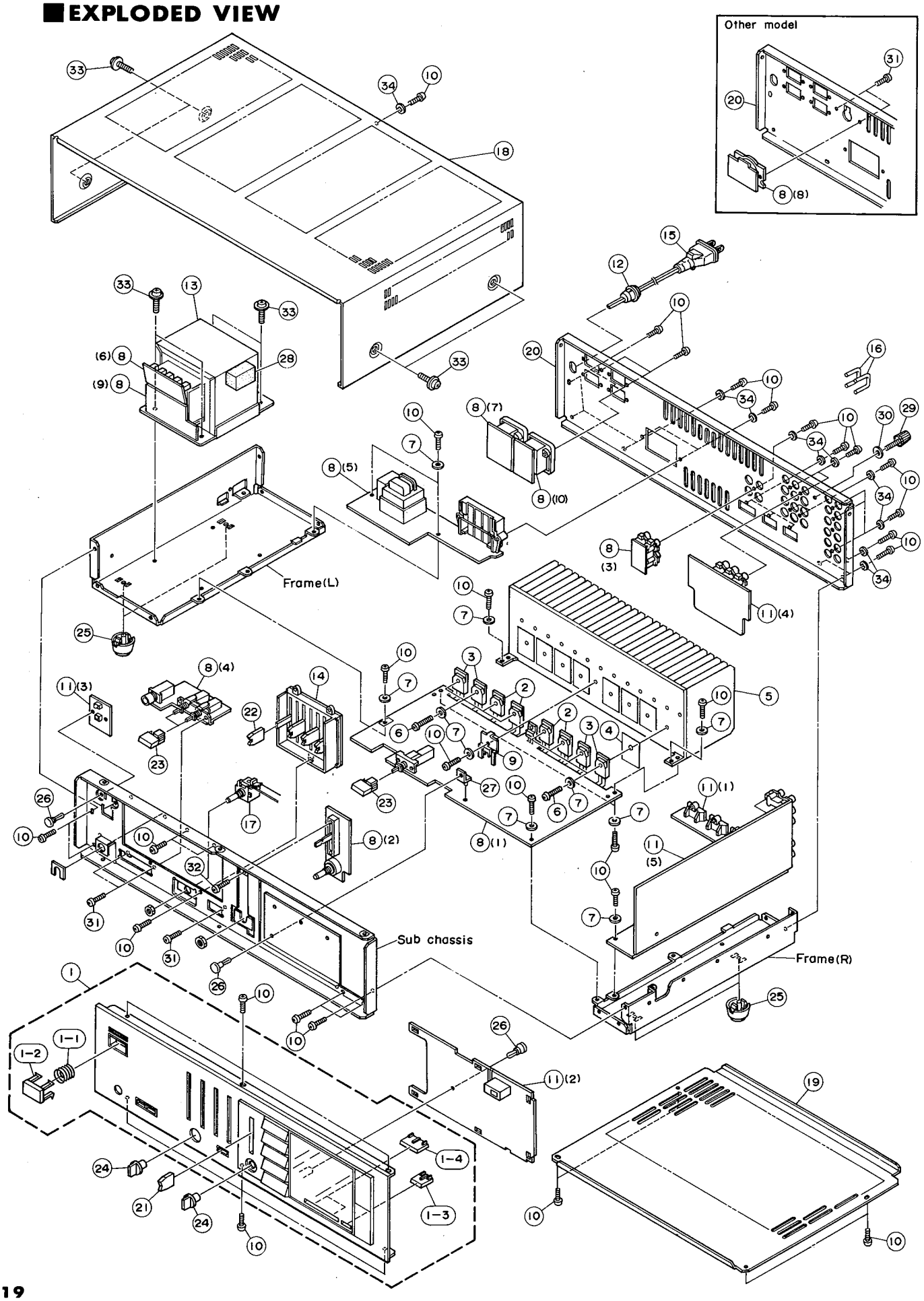
	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
		BB 06 83 70	Ground Metal		アース金具				
※		VA 82 15 00	Radiator		ラジエター				
		Ei 33 01 46	Binding Head Tapping Screw	3×14 ZMC2-Bl	バインドタッピングネジ	PACK			
		EV 20 30 36	Plain Washer	φ3 FCRM3-Bl	平座金	PACK			
※		***NA 08 97 10***	***Function Circuit Board***		ファンクションシート				
		FA 15 32 70	Mylar Cap.	2700pF 50V	マイラーコン	C107,108			
		FA 15 41 00	〃	0.01μF 50V	〃	C109,110,146			
		FG 41 13 30	Ceramic Cap.	33pF 50V	セラコン	C123,124			
		FG 41 21 00	〃	100pF 50V	〃	C129,136,401			
		FG 41 22 20	〃	220pF 50V	〃	C103,104,140			
		FG 41 24 70	〃	470pF 50V	〃	C141,150			
		FG 41 32 20	〃	2200pF 50V	〃	C131,132			
		FG 44 41 00	〃	0.01μF 50V	〃	C111,112			
		FG 44 44 70	〃	0.047μF 50V	〃	C135			
		FZ 00 41 30	Semiconductive Ceramic Cap.	0.1μF 25V	半導体セラコン	C148,149			
		VA 95 68 00	Electrolytic Cap.	47μF 6.3V	ブラックゲートコン	C105,106			
		UJ 11 84 70	〃	470μF 6.3V	ケミコン	C142			
		UH 13 71 00	〃	10μF 16V	〃	C119,120,130,138,147,305,306			
		UH 13 72 20	〃	22μF 16V	〃	C125~128,144,301,302			
		UH 13 73 30	〃	33μF 16V	〃	C137,139,402~404,407,408			
		UJ 11 91 00	〃	1000μF 6.3V	〃	C143			
		UJ 13 84 70	〃	470μF 16V	〃	C405,406			
		UH 16 54 70	〃	0.47μF 50V	〃	C101,102			
		UH 16 61 00	〃	1μF 50V	〃	C121,122,133,134,151			
		UH 16 64 70	〃	4.7μF 50V	〃	C113~118,145,303,304			
※		VA 92 68 00	Coil	38kHz	同調コイル	L101			
		GG 00 07 00	Ceramic Resonator	FCR400K	セラミック振動子	XL101			
		HV 45 34 70	Flame Proof Carbon Resistor	4.7Ω 1/4W	不燃化カーボン抵抗	R228			
		HV 45 51 50	〃	150Ω 1/4W	〃	R408,409			
		iA 10 15 21	Transistor	2SA1015 (Y)	トランジスタ	Q102,106~110,116,403,405			
		iA 09 34 00	〃	2SA934	〃	Q105			
		iC 18 15 20	〃	2SC1815 (Y)	〃	Q103,104,115,301,401,402,404,406			
		iC 20 60 00	〃	2SC2060	〃	Q101			
		iX 60 42 00	〃	2SC2878(A,B)	〃	Q113,114,111,112	Inter-changeable		
		iC 33 27 00	〃	2SC3327	〃	〃			
		iF 00 34 50	Diode	1SS133	ダイオード	D101~108,110~115,331~333			
		iF 00 87 30	LED (Red)	SLR-34URC3H3	LED	D301~312,330,334			
		iF 00 87 40	〃 (Green)	SLR-34MC3H3	〃	D313~320,323~329			
※		iF 01 06 00	Zener Diode	MTZ3.9B	ツェナーダイオード	D321			
※		iF 01 07 10	〃	MTZ5.6A	〃	D109			
		iK 00 05 70	Photo Diode	PN323B	フォトダイオード	D322			
		iG 05 82 00	IC	M5218L	IC	IC101,105,106,111,301			
		iG 14 92 00	〃	BA6340	〃	IC110			
		iG 14 93 00	〃	LC4966	〃	IC102~104,401			
※		XA 54 70 01	〃	BA7001	〃	IC402			
※		XA 54 80 01	〃	LC6505C-3024	〃	IC109			

※New Parts（新規部品）

	Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
※		XA 54 90 01	IC	LB1294 I C	IC108			
※		XA 55 00 01	〃	MN6632A 〃	IC107			
※		XA 55 20 01	〃	BA6144 〃	IC302,303			
※		XA 55 30 01	〃	LB1417 〃	IC304			
※		XA 56 90 01	〃	BA6110 〃	IC112,113			
		KA 90 10 70	Switch	SWT リモートスイッチ	SW101			
		KA 90 63 80	〃	SMEVQ-QRB-04M ライトタッチスイッチ	SW301~311			
		LB 10 07 30	Mini Jack	S-G8035 ミニジャック	JK101			
		LB 20 23 60	Pin Jack	2P ピンジャック	PJ101			
		LB 40 10 70	〃	4P 〃	PJ102,103			
※		VA 92 71 00	〃	6P 〃	PJ401,402			
※		LB 50 07 10	Socket	5P SPコネクタソケット				
※		LB 60 83 90	〃	6P 〃				
		LB 91 80 20	Base Pin	2P i-Type XHベースピンi型				
		LB 91 80 30	〃	3P i-Type 〃				
※		LB 91 80 50	〃	5P i-Type 〃				
※		VA 82 65 00	Connector	4P JP-3 ジャンパーコネクター				
※		VA 82 68 00	〃	7S JP-3 〃				
※		VA 82 69 00	〃	8P JP-3 〃				
※		VA 72 54 00	Cable Holder	4P パラレルケーブルホルダー				
※		VA 72 55 00	〃	5P 〃				
※		VA 72 56 00	〃	6P 〃				
※		VA 72 57 00	〃	7P 〃				
※		VA 72 58 00	〃	8P 〃				
		AA 62 61 00	Shield Plate	シールド板				
※		AA 62 91 80	Shield Case	シールドケース				
※		CB 64 78 20	Support	サポート Di				

※New Parts（新規部品）

■EXPLODED VIEW



■ MECHANISM PARTS

Note) ϕ : Diameter

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク	
※	1	NB 63 30 20	Panel Unit		パネルユニット					
	1-1	AA 62 20 80	Spring		スプリング					
※	1-2	CB 65 33 60	Button		ボタン	Power	A-30			
※	1-3	CB 65 01 80	〃		〃	MUTING				
※	1-4	CB 65 01 90	〃		〃	VIDEO SELECTOR				
	2	iX 60 64 60	Transistor	2SA1492	トランジスタ	Q521,522,525,526				⚠
	3	iX 60 64 70	〃	2SC3856	〃	Q519,520,523,524				⚠
※	4	VB 43 50 00	Sheet, Radiation		放熱シート					
※	5	BA 09 40 60	Radiator		ラジエター					
	6	Ei 33 01 46	Binding Head Tapping Screw	3×14 ZMC2-BI	バインドタッピングネジ	PACK				
	7	EV 20 30 36	Plain Washer	ϕ3 FCRM3-BI	平座金	PACK				
※	8	NA 08 96 70	Main Circuit Board		メインシート			R		
※	〃	NA 08 96 80	〃		〃			U		
※	〃	NA 08 96 90	〃		〃			A,B		
※	〃	NA 08 97 00	〃		〃			C		
※	9	AA 62 87 90	Support,TR		サポートTR					
	10	Ei 33 00 86	Binding Head Tapping Screw	3×8 FCRM3-BI	バインドタッピングネジ	PACK				
※	11	NA 08 97 10	Function Circuit Board		ファンクションシート					
	12	CB 62 01 90	Cord Stopper	CM-22B	コードストッパー			R,A,B		
	〃	CB 62 02 00	〃	CM-22C	〃			U,C		
※	13	XA 56 20 01	Power Transformer		電源トランス			R		⚠
※	〃	XA 56 30 01	〃		〃			U		⚠
※	〃	XA 56 40 01	〃		〃			C		⚠
※	〃	XA 56 50 01	〃		〃			A,B		⚠
※	14	VA 91 18 00	Slide Volume Unit		スライドVRユニット					
	15	MG 00 16 30	Power Cord	6A 250V 2m	電源コード			R		⚠
※	〃	MG 00 23 10	〃	7.5A 250V 2m	〃			A		⚠
	〃	MG 00 09 20	〃	7.5A 250V 2.5m	〃	Interchangeable		A		⚠
	〃	MG 00 14 90	〃	7.5A 250V 2.5m	〃			A		⚠
	〃	MG 00 18 60	〃	2.5A 250V 2m	〃			B		⚠
	〃	MG 00 22 20	〃	10A 125V 1.98m	〃			U,C		⚠
	16	LB 10 11 10	Short Plug		ショートプラグ	Accessory				
※	17	VA 92 64 00	Remote Switch		リモートスイッチ					
※	18	AA 62 88 30	Top Cover		トップカバー		A-30			
※	19	AA 62 88 20	Bottom Cover		ボトムカバー		A-30			
※	20	AA 62 88 60	Rear Panel		リアパネル			R		
※	〃	AA 62 88 70	〃		〃			U,C		
※	〃	AA 62 90 60	〃		〃			A,B		
※	21	CB 65 02 50	Knob		ノブ	LOUDNESS	A-30			
※	22	CB 65 02 40	〃		〃	BASS,TREBLE	A-30			
	23	CB 63 42 30	Push Button		プッシュボタン	SPEAKERS DYNAMIC,NOISE CANCEL				
	24	CB 63 42 70	Knob,Switch		スイッチノブ	REC OUT,BALANCE				
	25	CB 61 03 90	Leg		脚					
	26	CB 06 88 80	Plastic Rivet		プラスチックリベット					
	27	CB 09 12 90	Holder P.C.B		基板ホルダー					
※	28	CB 65 34 00	Cushion		クッション		A-30			
	29	AA 62 73 10	Ground Terminal Screw	3×13 STG	アース端子ネジ					
	30	EV 90 13 60	Sems Plain Washer	ϕ10×ϕ3.6×t0.8 FNM3-3g	セムス平座金					
	31	ED 33 00 66	Binding Head Screw	3×6 FCRM3-BI	バインド小ネジ	PACK				
	32	ED 02 00 36	〃	2×3 ZMC2-Y	〃	PACK				
	33	EK 36 50 40	BW Head Screw	4×8 FCRM3-BI	BWヘッド小ネジ					
	34	EV 41 30 36	Toothed Lock Washer	ϕ3 FCRM3-BI	歯付座金	PACK				
		CB 06 92 50	Binding Tie	BK-1	インシュロックタイ					

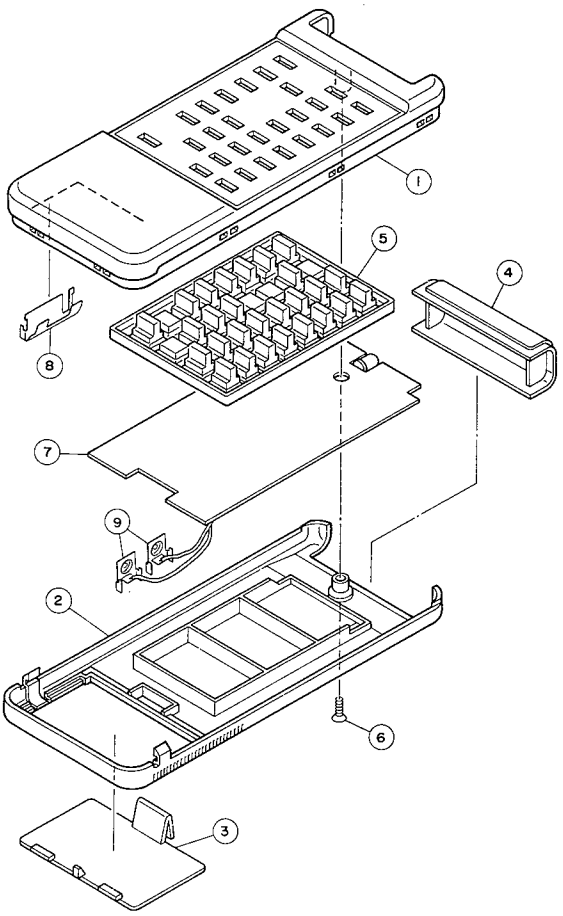
※New Parts（新規部品）

A-32

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
			Accessories		付属品				
※		VA 94 58 00	Connector	5P	STコネクタ				
※		VA 94 59 00	〃	6P	〃				
		Mi 08 17 80	Mini Plug Cord		ミニプラグコード				
※		VA 80 13 00	Remote Control Transmitter	RS-CS32	リモートコントロールトランスミッター				
			Dry Battery	SUM-3(AA,R6)	単3乾電池				

※New Parts（新規部品）

■EXPLODED VIEW(RS-CS32)



■PARTS LIST(RS-CS32)

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
※		***VA 80 13 00***	***Remote Control Transmitter***	RS-CS32	リモートコントロールトランスミッター				
※	1	XX 67 51 50	Case (A)		ケース(A)				
	2	XX 67 16 20	〃 (B)		〃 (B)				
	3	XX 67 16 30	〃 (C)		〃 (C)				
	4	XX 67 16 40	Filter		フィルター				
	5	XX 67 51 60	Rubber		ゴム接点				
	6	XX 67 16 60	Flat Head Screw		皿小ネジ				
	7	XX 67 51 30	P.C.Board Ass'y		プリント基板 Ass'y				
	8	XX 64 24 80	Battery Terminal A		電池電極板A				
		XX 67 51 30	***P.C.Board Ass'y***		プリント基板 Ass'y				
		iX 60 16 00	IC	μPD1943G	IC	IC1			
		QX 60 00 40	Ceramic Resonator	KBR-455BTL	セラミック振動子	XL01			
		iF 00 06 70	Diode	IS2473	ダイオード	D2~6			
		iX 60 36 00	LED	SLR-932A	LED	LED01			
		iC 26 73 00	Transistor	2SC2673	トランジスタ	TR1			
		FG 21 21 00	Ceramic Cap.	100pF 50V	セラコン	C1,2			
		UJ 11 74 70	Electrolytic Cap.	47μF 6.3V	ケミコン	C3			
		HX 60 14 00	Carbon Resistor	2Ω 1/4W	カーボン抵抗	R1			
	9	XX 64 24 90	Battery Terminal		電極板C				

Part List for Carbon Resistor

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ353100	※	12KΩ	HJ357120	HF857120
1.8 〃	HJ353180	※	15 〃	HJ357150	HF857150
2.2 〃	HJ353220	HF853220	18 〃	HJ357180	HF857180
3.3 〃	HJ353330	HF853330	22 〃	HJ357220	HF857220
4.7 〃	HJ353470	HF853470	27 〃	HJ357270	HF857270
5.6 〃	HJ353560	HF853560	33 〃	HJ357330	HF857330
10 〃	HJ354100	HF854100	39 〃	HJ357390	HF857390
15 〃	HJ354150	HF854150	47 〃	HJ357470	HF857470
22 〃	HJ354220	HF854220	56 〃	HJ357560	HF857560
27 〃	HJ354270	HF854270	68 〃	HJ357680	HF857680
33 〃	HJ354330	HF854330	82 〃	HJ357820	HF857820
39 〃	HJ354390	HF854390	91 〃	HJ357910	HF857910
47 〃	HJ354470	HF854470	100 〃	HJ358100	HF858100
56 〃	HJ354560	HF854560	120 〃	HJ358120	HF858120
68 〃	HJ354680	HF854680	150 〃	HJ358150	HF858150
82 〃	HJ354820	HF854820	180 〃	HJ358180	HF858180
100 〃	HJ355100	HF855100	220 〃	HJ358220	HF858220
110 〃	HJ355110	HF855110	270 〃	HJ358270	HF858270
120 〃	HJ355120	HF855120	330 〃	HJ358330	HF858330
150 〃	HJ355150	HF855150	390 〃	HJ358390	HF858390
160 〃	HJ355160	※	470 〃	HJ358470	HF858470
180 〃	HJ355180	HF855180	560 〃	HJ358560	HF858560
220 〃	HJ355220	HF855220	680 〃	HJ358680	HF858680
270 〃	HJ355270	HF855270	820 〃	HJ358820	HF858820
330 〃	HJ355330	HF855330	1.0MΩ	HJ359100	HF859100
390 〃	HJ355390	HF855390	1.2 〃	HJ359120	※
470 〃	HJ355470	HF855470	1.5 〃	HJ359150	HF859150
510 〃	※	HF855510	1.8 〃	HJ359180	HF859180
560 〃	HJ355560	HF855560	2.2 〃	HJ359220	HF859220
680 〃	HJ355680	HF855680	3.3 〃	HJ359330	HF859330
820 〃	HJ355820	HF855820	3.9 〃	HJ359390	※
910 〃	HJ355910	HF855910	4.7 〃	HJ359470	※
1.0KΩ	HJ356100	HF856100			
1.2 〃	HJ356120	HF856120			
1.5 〃	HJ356150	HF856150			
1.8 〃	HJ356180	HF856180			
2.0 〃	HJ356200	HF856200			
2.2 〃	HJ356220	HF856220			
2.4 〃	HJ356240	HF856240			
2.7 〃	HJ356270	HF856270			
3.0 〃	HJ356300	HF856300			
3.3 〃	HJ356330	HF856330			
3.6 〃	HJ356360	HF856360			
3.9 〃	HJ356390	HF856390			
4.7 〃	HJ356470	HF856470			
5.1 〃	HJ356510	HF856510			
5.6 〃	HJ356560	HF856560			
6.8 〃	HJ356680	HF856680			
8.2 〃	HJ356820	HF856820			
9.1 〃	HJ356910	HF856910			
10 〃	HJ357100	HF857100			